

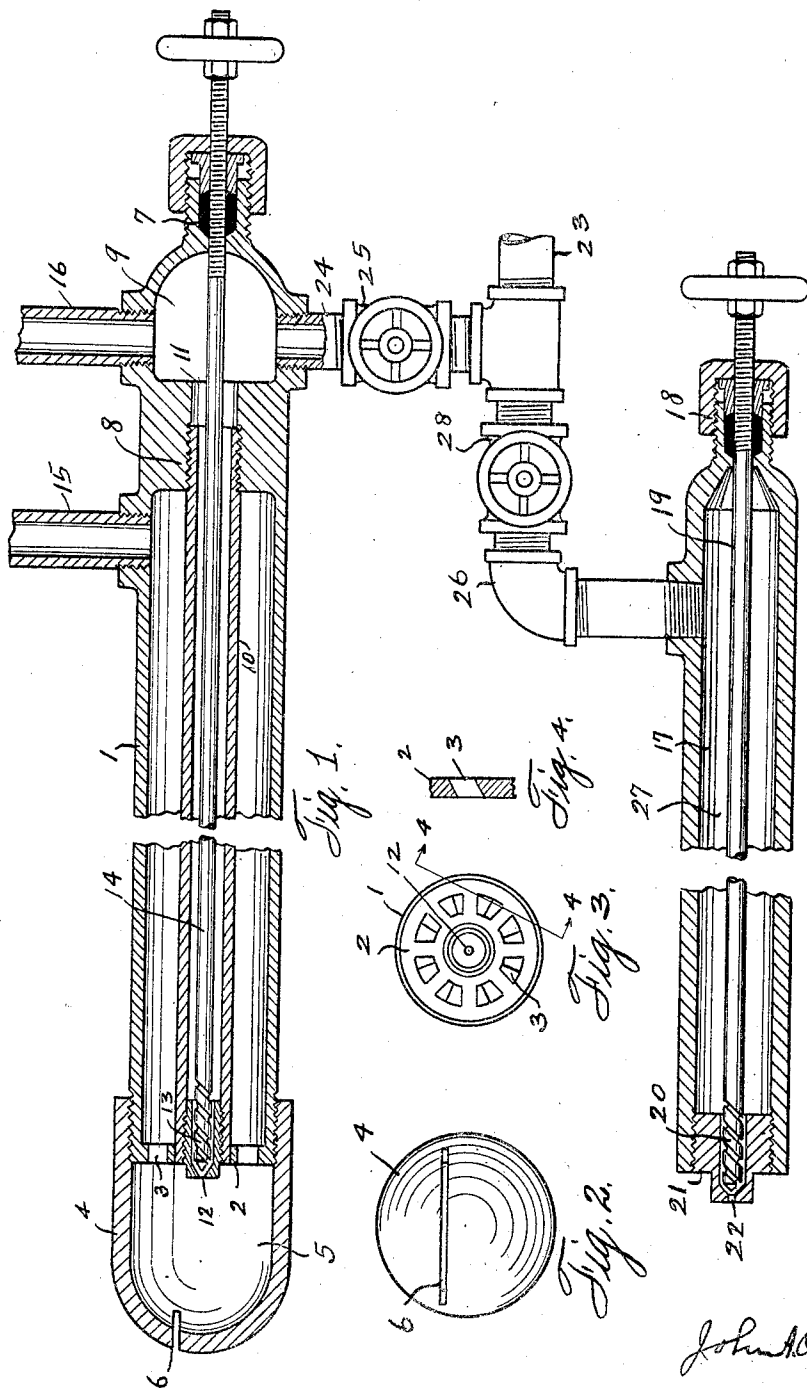
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OIL BURNER

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UNITED STATES PATENT OFFICE.

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OIL BURNER.

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This invention relates to new and useful improvements in an oil burner.

One object of the invention is to provide a burner of the character described specially designed for utilizing crude petroleum as a fuel.

Another object of the invention resides in the provision of a burner of the character described with a specially designed discharge nozzle, whereby the fuel will be thoroughly vaporized as it is discharged and thereby rendered completely combustible.

A further feature of the invention resides in a novel arrangement providing for the cleansing of the burner.

With the above and other objects in view this invention has particular relation to certain novel features of construction, operation and arrangement of parts, an example of which is given in this specification and illustrated in the accompanying drawings, wherein:—

Figure 1 shows a longitudinal sectional view of the burner showing a pilot burner associated therewith.

Figure 2 shows an outer end view of the discharge nozzle.

Figure 3 shows an inner end view of said nozzle; and,

Figure 4 shows a sectional view thereof, taken on the line 4—4 of Figure 3.

Referring now more particularly to the drawings, the numeral 1 designates a tubular body, forming a steam chamber whose nozzle end is partly closed by a transverse web 2 having a central bearing and around it an annular row of perforations 3 which are similarly inclined, or spiralled, as shown in Figures 3 and 4 to impart a whirling motion to the steam passing, under pressure, therethrough.

Threaded onto said end of the body there is a nozzle 4 having an internal mixing chamber 5 and a transverse slot 6 through which the mixture, formed in the chamber, is discharged.

The opposite end of the body is formed with a stuffing box 7 and intermediate its ends it is contracted, as at 8, forming the fuel chamber 9. A fuel conducting tube 10 has one end screwed into the central passageway 11 of the contracted portion 8, and its other end is fitted into the central bearing of the web 2, and is provided with a contracted discharge nozzle 12. This nozzle is controlled by a valve 13 having a

spiralled groove and carried by the free end of the stem 14 which is threaded through the stuffing box 7, and extends through the tube 10.

There are a pair of steam lines 15, and 16, one entering the main steam chamber 1 and the other entering the fuel chamber 9. Through these lines fluid, such as steam, under pressure, is admitted into said chambers.

The numeral 17 designates the tubular body of an auxiliary or pilot burner which is arranged underneath the main burner.

One end of this body has a stuffing box 18 through which the valve rod 19 is threaded. The free end of this rod is formed into a spiralled valve 20. Threaded into the nozzle end of the body 17 there is a plug 21 formed with a discharge nozzle 22, which is controlled by said valve.

The numeral 23 designates a fuel line which branches; one branch 24 entering the fuel chamber 9, and being controlled by the gate valve 25, and the other line 26 entering the chamber 27 within the body of the pilot burner and being controlled by the gate valve 28.

When the valve 28 is opened the oil will fill the chamber 27 and be discharged through the nozzle 22 where it may be ignited. The flame will heat the main burner and the valve 25 may be now opened to supply fuel to the main burner. The fuel is supplied under pressure and will be discharged out through the nozzle 12.

Steam or air under pressure is supplied through the line 15 and will be driven through the ports 3 into the chamber 5 with a whirling motion and will mix with the fuel in said chamber and the vaporized mixture will be discharged through the slit 6 and there ignited by the flame of the pilot burner and thereupon the valve 28 may be closed.

When the fuel is cut off and the fire extinguished, steam may be admitted into the chamber 9, and forced through the fuel pipe 10 to thoroughly cleanse the same.

What I claim is:—

1. An oil burner including a tubular body, one end of which is partly closed by a transverse web having a central bearing around which are perforations and the other end being formed with a stuffing box, a nozzle secured on the first named end and having an internal mixing chamber, and a

transverse discharge slot, said body being contracted intermediate its ends forming a steam chamber and a fuel chamber, a fuel conducting tube, one end of which is secured
5 into said contracted portion and the other end of which is fitted through the central bearing of said web and is provided with a contracted discharge nozzle, a valve having a spiral groove and controlling said discharge nozzle, said valve having a stem
10 which extends through said tube and stuffing box, inlet lines, one entering said steam chamber and the other two entering said fuel chamber.
15 2. An oil burner including a tubular body, one end of which is partly closed by a transverse web having a central bearing around which are perforations and the other end being formed with
20 a stuffing box, a nozzle secured on the first named end and having an internal mixing

chamber and a transverse discharge slot, said body being contracted intermediate its ends forming a steam chamber and a fuel chamber, a fuel conducting tube, one end of
25 which is screwed into said contracted portion of said body and whose other end is fitted through the central bearing of said web and is provided with a contracted discharge nozzle, a valve having a spiralled
30 groove and controlling said nozzle, said valve having a stem which extends through said tube and stuffing box, inlet lines, one entering said steam chamber and the other two entering said fuel chamber, a pilot
35 burner associated with said tubular body and a valve controlled line leading from one of the fuel lines and supplying fuel to the pilot burner.

In testimony whereof I have signed my
40 name to this specification.

JOHN A. OWEN.